

Method of reproducing additional information contained in a television or radio programme signal

In order to make the ordering of products presented on television or radio as simple as possible for the television or radio broadcast user and simultaneously to guarantee the legal security required for ordering, it is proposed to transmit additional information, particularly in the form of text and possibly graphics, within the programme signal in temporal correlation with the programme content and to decode it at the receiving end. The additional information received is stored temporarily at the receiving end for a specific period of time. Plain text and possibly graphics information contained in the additional information last received is reproduced for a specific period of time in response to a first command from the user. During the reproduction of the plain text and possibly the graphics information, ordering or selection information associated with the plain text and possibly graphics information is extracted from the additional information last stored temporarily and forwarded to an automatic exchange (e.g. modem) in response to a second command from the user.

Description

The invention relates to a method according to the pre-characterising part of claim 1. A method of this kind is known from Rundfunktechnische Mitteilungen, Vol. 1, 1978, "Anlage zur Aufbereitung und Einblendung von Untertiteln nach dem englischen Teletext-Standard" [System for processing and inserting subtitles in accordance with the British teletext standard].

It is known from the aforementioned literature reference to insert subtitles into the television picture in the case of foreign-language television sound or to assist the deaf. The inserted subtitles are in temporal correlation with the television picture.

It is furthermore known to present products in television commercials and to specify the prices and the telephone numbers by means of which the products advertised previously can be ordered separately for each country at the end of the commercial. However, this process referred to as "teleshopping" has the disadvantage that the relevant telephone numbers have to be written down by the television broadcast user. The direct reference between the television presentation of the product and the display of the price and the telephone number moreover suffers. In addition, after writing down the telephone number, the television broadcast user has to order by telephone, with a large number of call attempts being required if a large number of television broadcast users wish to order at the same time.

The aim of the invention consists in turning a method of the type mentioned at the outset to good use for the ordering of products in order to make ordering as simple as possible for the user and simultaneously to guarantee the legal security required for ordering.

This problem is solved according to the invention by the characterising features of claim 1.

Advantageous embodiments and developments of the method according to the invention according to claim 1 will be clear from the dependent claims.

The invention is based on the concept of giving the television or radio broadcast user the opportunity to retrieve plain text information during the graphic or acoustic

presentation of products or services at the touch of a button, rendered visible by insertion into the television picture or reproduction on a display on the receiver. In particular, the plain text information consists of more details about the product, including the price, required for the user to make a decision about purchase. To order, the user simply has to press once again on a special key on his receiver or his remote control, after which the ordering procedure is initiated automatically. The user furthermore receives an acknowledgement once an ordering procedure has been initiated.

The invention will now be described in more detail with reference to one embodiment illustrated in the accompanying drawings, in which:

Fig. 1a and Fig. 1b show two teletext pages containing additional information;

Fig. 2 shows a receiving device according to the invention for decoding the additional information;

Fig. 3 is a representation of the time sequence of individual television items and the associated additional information, and

Fig. 4 is a representation of the time sequence of the display of the plain text information and of the time windows for initiating an ordering procedure or transmitting selection information.

The data required for ordering or selection is broadcast in temporal correlation with the television programme as additional information on teletext pages similar to subtitles with specific page numbers known to the receiving device. The example shown in Fig. 1a ("Red summer dress for DM 19,95") contains plain text information, a telephone number and a product number for ordering the summer dress. Alternatively, as shown in Fig. 1b, a number for selection identification, e.g. for an anonymous poll ("Will XYZ obtain the next election?") can be transmitted instead of the product number.

Fig. 2 is a block diagram for a receiving device according to the invention, set up externally and connected to a television set via a scart cable. The television signal with the teletext data received from the television set is sent via the scart cable to a

teletext decoder installed in the receiving device and to an inserter. The teletext decoder 1 detects the pages from the incoming teletext data requested by a controller and checks the content of the selected pages (see Fig. 1a or Fig. 1b) for additional information.

A receiving device according to the invention installed in a television set is designed in a similar manner to a receiving device with a scart cable. When the receiving device is installed, the inserter is dispensed with and the RGB signals at the output of the teletext decoder are sent directly to the television screen via a switch and corresponding amplifiers.

If error-free additional information is detected by the teletext decoder 1, it is stored temporarily in a RAM, a message is sent to the controller 3 and a corresponding display is provided for the user, e.g. the flashing of a green LED display. In the case of receiving devices according to the invention already integrated into television receivers, it is also conceivable to effect corresponding signalling on the front of the casing of the television set.

The presence of additional information can moreover be indicated to the user in that, e.g. a logogram is generated by the teletext decoder, inserted into the television signal by the inserter, returned to the television set via the scart cable and displayed in a corner of the screen together with the selected programme.

plush If additional information is present and the user actuates a key which is associated with the receiving device and can be arranged either on the casing of the receiving device or on the remote control of the television set or on the receiving device according to the invention, a corresponding control signal is transmitted to the controller, after which the teletext decoder 1 can load the additional information last stored temporarily from the RAM 4 and display the plain text information contained therein (Figures 1a and 1b) on the screen of the television set via the inserter.

If the key is pressed a second time by the user, the telephone number from the additional information stored temporarily in the RAM 4 (Figures 1a and 1b) is sent to a modem and a dialling procedure is initiated. A corresponding telephone line from the receiving device according to the invention leads from the modem 5 to a telephone

connection of the user. Once the connection with the dialled subscriber has been established, in the case of ordering information, the product number (Fig. 1a) for the desired product is transmitted together with a device number for identification of the user from a PROM. If, on the other hand, the additional information contains a selection identification number (Fig. 1b), only it is transmitted to the dialled subscriber, without the device number, in order to preserve the anonymity of the user.

The modem indicates successful transmission of the data to the controller, which in turn sends a corresponding message to the teletext decoder for display on the screen. Corresponding display on an associated LED display or on the television set if a receiving device is installed is moreover conceivable.

If, on the other hand, no connection can be established by the modem, the dialling procedure is repeated after a time interval determined by a random generator in the controller. This method of procedure is required, in particular, for the temporal equalisation of repeat dialling, which can occur when an ordering procedure or a selection procedure is initiated by the user in many receiving devices at the same time (e.g. in the case of a competition "The first ten callers win").

The time sequences of the individual television items with the associated additional information and the ordering and selection possibilities are shown in more detail in Figures 3 and 4 in order to illustrate the invention.

Fig. 3(a) shows two successive commercials "Spot A" and "Spot B". Fig. 3(b) shows the additional information "A" for "Spot A" and "B" for "Spot B", all transmitted, e.g. for $t_0 = 20$ sec.

The arrival of the additional information and therefore the possibility of reacting immediately and taking up the offer is indicated to the user by a corresponding display, e.g. by inlaying a logogram into the relevant programme. If, on the other hand, no additional information is detected by the receiving device, e.g. for more than $t_1 = 30$ sec, the display is cancelled again (Fig. 4(a)).

When the user presses the key for the first time (Fig. 4(b)), the plain text information from the additional information "A" is inserted into the current commercial "Spot A". When the additional information "B" arrives, the display changes automatically and

the plain text information relating to "Spot B" is displayed. The plain text information for "Spot B" is cancelled from the screen if the first keystroke is not followed by a second keystroke within, e.g. $t_2 = 100$ sec.

In order to prevent ordering of the wrong product or incorrect selection in the event of the additional information changing unexpectedly, it is provided that any second keystroke to initiate the ordering procedure or selection is ignored for, e.g. $t_3 = 2$ sec after a change (Fig. 4(c)).

In an ordering procedure (Fig. 1a), the dialled subscriber (e.g. a credit card organisation) receives the product number and the device number. It identifies the orderer by way of the device number, sends the address, association where the account is held and the product required to the body responsible for delivery and arranges payment if necessary. A selection procedure (Fig. 1b) is similar to an ordering procedure, except that there is no transmission of the device number to identify the user.

A successful ordering or selection procedure and successful transmission of the ordering or selection data is displayed in a suitable manner for the user by the receiving device.

Instead of the additional information being transmitted by television and inserted into a television picture, the additional information can equally be transmitted in a radio programme signal and reproduced on a display on the radio receiver. A digital radio programme signal is particularly suitable to this end on account of the large transmission capacity. However, an analog radio programme signal (FM and AM signals) provided with an RDS (radio data system) signal is also possible, as the RDS signal still has unallocated identities that can be used for the additional information according to the invention.

Claims

1. Method of reproducing additional information contained in a television or radio programme signal, particularly in the form of text and possibly graphics, transmitted within the programme signal in temporal correlation with the programme content and decoded at the receiving end, characterised in that the additional information received is stored temporarily at the receiving end for a specific period of time, that plain text and possibly graphics information contained in the additional information last received is reproduced for a specific period of time in response to a first command from the user and that during the reproduction of the plain text and possibly the graphics information, ordering or selection information associated with the plain text and possibly graphics information is extracted from the additional information last stored temporarily and forwarded to an automatic exchange (e.g. modem) in response to a second command from the user.
2. Method according to claim 1, characterised in that, when the additional information changes during reproduction, execution of the second command is disabled for a specific period of time.
3. Method according to claim 1 or claim 2, characterised in that the temporary storage of additional information at the receiving end is indicated optically to the user, at least for a fixed period of time.
4. Method according to one of claims 1 to 3, characterised in that the ordering information contains product identification and a telecommunication number, possibly in coded form, and that the automatic exchange carries out a dialling procedure in accordance with the telecommunication number and, once the telecommunication link has been established, transmits the product identification together with a user identification to the called subscriber.
5. Method according to claim 4, characterised in that the product identification extracted and the telecommunication number extracted are stored temporarily and that the user identification is stored permanently.

6. Method according to claim 4 or claim 5, characterised in that, in the event of error-free transmission of the product identification and user identification, the called subscriber transmits an acknowledgement back to the automatic exchange.
7. Method according to claim 6, characterised in that the acknowledgement transmitted back is displayed in a suitable manner on the reproduction device.
8. Method according to claim 6, characterised in that the acknowledgement transmitted back triggers optical and/or acoustic signalling.
9. Method according to one of claims 4 to 8, characterised in that, in the event of an unsuccessful switching attempt or in the event of defective transmission of the product identification and user identification, the automatic exchange carries out another switching and transmission attempt after a waiting period determined in accordance with a law of chance.
10. Method according to one of claims 4 to 9, characterised in that a dialling procedure is only effected if the use of the automatic exchange is approved by the authorised user.
11. Method according to one of claims 1 to 3, characterised in that the selection information contains selection identification and a telecommunication number, possibly in coded form, and that the automatic exchange carries out a dialling procedure in accordance with the telecommunication number and, once the telecommunication link has been established, transmits the selection identification to the called subscriber.
12. Method according to claim 11, characterised in that the selection identification extracted and the telecommunication number extracted are stored temporarily.
13. Method according to claim 11 or claim 12, characterised in that, in the event of error-free transmission of the selection identification, the called subscriber transmits an acknowledgement back to the automatic exchange.
14. Method according to claim 13, characterised in that the acknowledgement transmitted back is displayed in a suitable manner on the reproduction device.

15. Method according to claim 13, characterised in that the acknowledgement transmitted back triggers optical and/or acoustic signalling.
16. Method according to one of claims 11 to 15, characterised in that, in the event of an unsuccessful switching attempt or in the event of defective transmission of the selection identification, the automatic exchange carries out another switching and transmission attempt after a waiting period determined in accordance with a law of chance.

2 pages of drawings

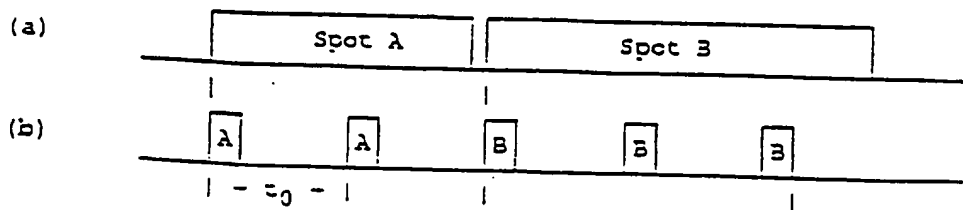


Fig 3

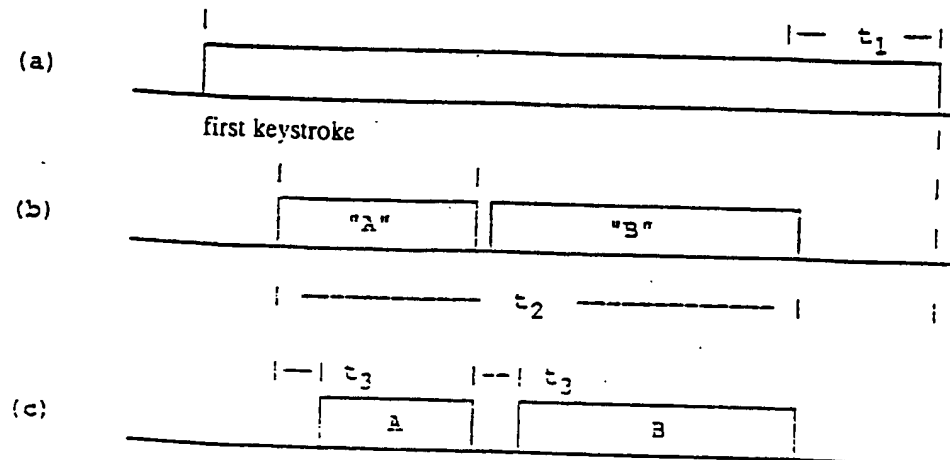


Fig 4

red summer dress for 15.95 DM	
product number	telephone number

poll: Will XYZ win the next election??	
identification number	telephone number

Fig 1a

teletext pages

Fig 1b

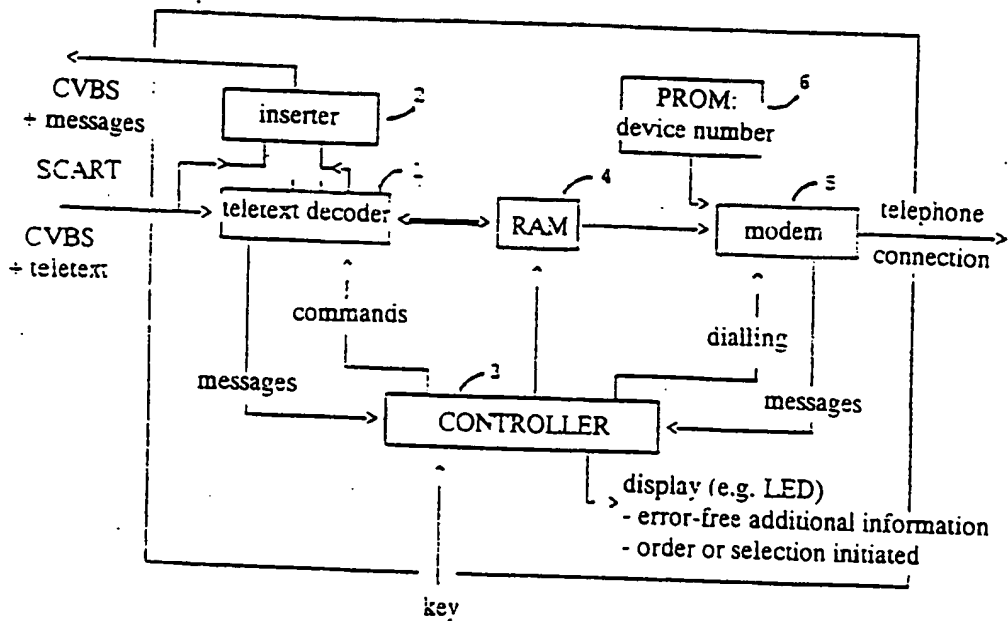


Fig 2